



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,112	11/13/2003	George H. Corrigan	10010484-2	7670

7590 09/16/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

NGUYEN, LAM S

ART UNIT PAPER NUMBER

2853

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/712,112

Applicant(s)

CORRIGAN, GEORGE H.

Examiner

LAM S NGUYEN

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>06/24/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

Claim 8 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 6 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 9 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 7 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 10 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 8 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 11 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 9 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 12 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 10 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 13 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 11 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 14 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 12 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 15 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 13 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 22 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 16 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 23 is rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 18 of prior U.S. Patent No. 6729707. This is a double patenting rejection.

Claim 25 is rejected under the judicially created doctrine of double patenting over claim 119 of U. S. Patent No. 6729707.

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-3 are rejected under the judicially created doctrine of double patenting over claim 1 of U. S. Patent No. 6729707.

Claim 4 is rejected under the judicially created doctrine of double patenting over claim 2 of U. S. Patent No. 6729707.

Claim 5 is rejected under the judicially created doctrine of double patenting over claim 3 of U. S. Patent No. 6729707.

Claim 6 is rejected under the judicially created doctrine of double patenting over claim 4 of U. S. Patent No. 6729707.

Claim 7 is rejected under the judicially created doctrine of double patenting over claim 5 of U. S. Patent No. 6729707.

Claim 16 is rejected under the judicially created doctrine of double patenting over claim 14 of U. S. Patent No. 6729707.

Claim 17 is rejected under the judicially created doctrine of double patenting over claim 15 of U. S. Patent No. 6729707.

Claims 18-21 are rejected under the judicially created doctrine of double patenting over claim 16 of U. S. Patent No. 6729707.

Claim 24 is rejected under the judicially created doctrine of double patenting over claim 19 of U. S. Patent No. 6729707.

The above claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter.

Furthermore, there is no apparent reason why applicant was prevented from presenting claims corresponding to those of the instant application during prosecution of the application which matured into a patent. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 7, 16, 18-21, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737) and Doluca (US 6208127).

Bohorquez discloses a fluid ejection device comprising:

an internal power supply path (*FIG. 3: The power line with the resistor R_p*);

a power regulator or a power delivery control loop (*FIG. 3, element 20*) providing an offset voltage (*FIG. 3: The voltage at the positive input of element 16*) from a feedback voltage;

Art Unit: 2853

a group of nozzles (*column 1, lines 25-35*);

a corresponding group of firing resistors (*FIG. 3, element RH and column 1, lines 25-35*);

a corresponding group of switches (*FIG. 3, element 18*) controllable to couple a selected firing resistor (*FIG. 3, element RH*) of the group of firing resistors between the internal power supply path and the offset voltage to thereby permit electrical current to pass through the selected firing resistor (*FIG. 3 and column 1, lines 25-35*).

Bohorquez does not disclose wherein the power regulator provides the offset voltage from the internal power supply path voltage.

Suzuki discloses a printing head driving apparatus for driving printing elements such as a coil in an impact printer (*FIG. 10, element 14b*) or a heating resistor in a thermal printer (*FIG. 13, element 41 and column 7, lines 25-31*). The apparatus has an internal power supply path (*FIG. 10, element Vcc*) and a power regulator (*FIG. 10, elements 32-33*) providing an offset voltage from the internal power supply path (*FIG. 10: The voltage at the input of the op-amp 31*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the power regulator disclosed by Bohorquez such as the power regulator provides the offset voltage from the internal power supply path voltage as disclosed by Suzuki. The motivation of doing so is to drive the printing elements in accordance to variations in the power source voltage in order to gain printing quality as taught by Suzuki (*column 2, lines 36-45*).

In addition, Bohorquez does not disclose that the power regulator includes a digital-to-analog converter (DAC) coupled to the internal power supply path and configured to receive a digital offset command representing a desired offset voltage to provide an analog offset voltage from the internal power supply path (**Referring to claims 2, 20**), a self-calibration circuit adapted to determine a regulation band of the power regulator defined by a lower set point offset voltage and an upper set point offset voltage wherein the self-calibration circuit includes a set point DAC up/down counter storing a set point offset voltage digital value which is provided as the digital offset command (**Referring to claims 7, 18-19, 21, 24**).

Doluca discloses a power regulator that includes a digital-to-analog converter (DAC) (*FIG. 3, element 330*) configured to receive a digital offset command (*FIG. 3, element 302*) representing a desired offset voltage to provide an analog offset voltage (*FIG. 3, element 332*) (**Referring to claims 2, 20**), a self-calibration circuit adapted to determine a regulation band of the power regulator defined by a lower set point offset voltage and an upper set point offset voltage (*FIG. 3, elements 310, 300, and 320*) wherein the self-calibration circuit includes a set point DAC up/down counter (*FIG. 3, element 300*) storing a set point offset voltage digital value which is provided as the digital offset command (*FIG. 3, element 302*) (**Referring to claims 7, 18-19, 21, 24**).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the power regulator in the printing system disclosed by Bohorquez such as including a self-calibration circuit adapted to determine a regulation band of the power regulator defined by a lower set point offset voltage and an upper set point offset voltage as disclosed by Doluca. The motivation of doing so is to obtain “programmable voltage

Art Unit: 2853

regulators that are used to provide output voltages that can be set to provide the output voltage required” as taught by Doluca (*column 1, line 25-28*).

Bohorquez also discloses the following claimed invention:

Referring to claim 3: wherein the power regulator further includes a feedback amplifier (*FIG. 3, element 16*) having a first input coupled to an input offset voltage (*FIG. 3, element 16: The positive input*), a second input coupled to a feedback line (*FIG. 3, element 16: The negative input*), and a output coupled to a drive line (*FIG. 3, element 16: The output line*), wherein a selected switch (*FIG. 3, element 18*) corresponding to a selected firing resistor (*FIG. 3, element RH*) has a control gate (*FIG. 3, element 18*) controlled by the drive line, and an internal power ground (*FIG. 3, element Rr*), wherein the selected firing resistor of the group of firing resistor includes a first terminal coupled to the internal power supply (*FIG. 3, element RH: A terminal that is connected to Rp*) and a second terminal coupled to the feedback line and the switch (*FIG. 3, element RH: A terminal that is connected to the negative input of the amplifier 16 and the switch 18 through resistor R1*), wherein the drive line provides the offset voltage to the feedback line and the second terminal of the selected firing resistor through the selected switch (*FIG. 3*).

Referring to claim 5: an internal power ground (*FIG. 3, the power line with Rr is connected to the emitter of the switch 18*); wherein the first terminal of the selected firing resistor is coupled to the internal power supply path (*FIG. 3, element RH: A terminal that is connected to Rp*); and wherein the selected switch is coupled between the second terminal of the firing resistor and the internal power ground (*FIG. 3: The switch 18 is located between the firing resistor RH (through R1) and the ground Rr*).

Art Unit: 2853

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohorquez (US 5357081) in view of Suzuki (US 4514737) and Doluca (US 6208127) as applied to claim 16, and further in view of Otsuki (US 6145961).

Bohorquez, as modified, discloses the claimed invention as discussed above except wherein the at least one fluid ejection device includes multiple fluid ejection devices.

Otsuki discloses a fluid ejection device including multiple fluid ejection devices, wherein each ejection device ejects different color ink for color printing (*FIG. 6, elements 81-82*).

Therefore, it would have been obvious for one having ordinary skill in the art at the time the invention was made to modify the printing system disclosed by Bohorquez, as modified, such as including multiple fluid ejection devices for printing multiple colors as disclosed by Otsuki. The motivation of doing so is to provide a printing apparatus that is capable to print multiple colors as taught by Otsuki (*Abstract*).

Response to Arguments

Applicant's arguments with respect to claims 1-3, 5, 7, 16, 18-21, 24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM S NGUYEN whose telephone number is (571)272-2151. The examiner can normally be reached on 7:00AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, STEPHEN D MEIER can be reached on (571)272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2853

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LN

September 14, 2004

Hai Pham
HAI PHAM
PRIMARY EXAMINER
PRIMA